



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
13.04.2005 Bulletin 2005/15

(51) Int Cl.7: **H04B 1/707, H04Q 7/32**

(43) Date of publication A2:
06.03.2002 Bulletin 2002/10

(21) Application number: **01307170.9**

(22) Date of filing: **23.08.2001**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR
 Designated Extension States:
AL LT LV MK RO SI

(72) Inventor: **Sasaki, Masayuki,**
c/o Hitachi Kokusai Electric Inc
Tokyo 164-8511 (JP)

(74) Representative: **Nicholls, Michael John**
J.A. KEMP & CO.
14, South Square
Gray's Inn
London WC1R 5LX (GB)

(30) Priority: **05.09.2000 JP 2000268027**

(71) Applicant: **Hitachi Kokusai Electric Inc.**
Tokyo 164-8511 (JP)

(54) **CDMA Base station system**

(57) The invention uses a CDMA base transceiver system that performs wireless communications through the use of a CDMA method. The invention thereby copes with a plurality of communication methods, through the use of that system, through an efficient construction thereof, simply by changing the software even if making no changes of, for example, the hardware. For example, an (illustrated) base band part is constructed

using an FPGA 31 for processing a chip-rate signal through FPGA program data and a DSP 32 for processing a symbol-rate signal through DSP program data. Through the use of program data setting means (not illustrated) it is possible to change the FPGA program data used by the FPGA 31 and the DSP program data used by the DSP 32 to program data that corresponds to a different type of communication method.

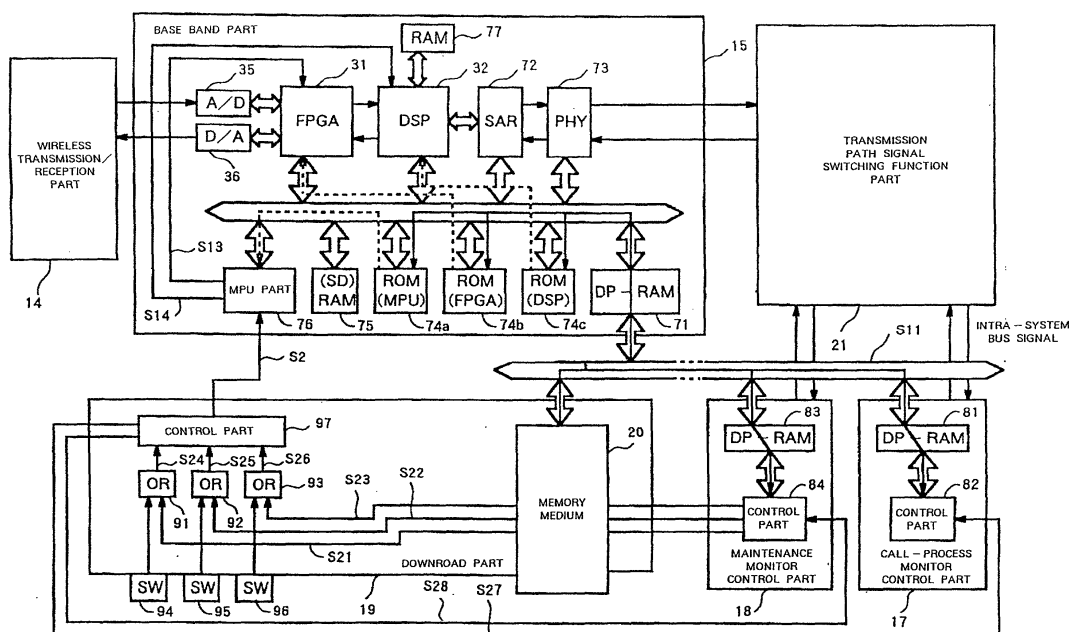


FIG. 5



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 30 7170

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 5-640 416 A (CHALMERS HARVEY) 17 June 1997 (1997-06-17) * column 4, line 11 - line 31 * * column 6, line 58 - column 7, line 6; figure 4 * * column 7, line 39 - column 8, line 6 * * column 16, line 10 - line 48; claims 3,4 *	1,2,7 11	H04B1/707 H04Q7/32
X	CHIASSARINI G ET AL: "Design aspects of digital modems for the forecoming demonstrations of mobile systems operating at SHF/EHF" PROCEEDINGS OF THE 2ND EUROPEAN WORKSHOP ON MOBILE AND PERSONAL SATELLITE COMMUNICATIONS, 9 October 1996 (1996-10-09), pages 165-179, XP010509215 SPRINGER-VERLAG LONDON, UK * paragraphs '0004!', '0005!; figures 1,2 *	1,2,7 11	
A			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
X	TUTTLEBEE W H W: "SOFTWARE RADIO TECHNOLOGY: A EUROPEAN PERSPECTIVE" IEEE COMMUNICATIONS MAGAZINE, IEEE SERVICE CENTER. PISCATAWAY, N.J, US, vol. 37, no. 2, February 1999 (1999-02), pages 118-123, XP000804514 ISSN: 0163-6804 * page 118, right-hand column, line 1 - page 119, left-hand column, line 6; figure 4 * * page 119, right-hand column, line 19 - page 123, right-hand column, line 2; figures 2,3; table 1 * ----- -/--	1,3-6, 8-10	H04B H04Q
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 15 February 2005	Examiner Nilsson, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			

2
EPO FORM 1503 03.82 (P04C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 30 7170

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	WO 96/14719-A (MOTOROLA INC; VAN-DEN HEUVEL, ANTHONY, P; WHINNETT, NICHOLAS, WILLIAM;) 17 May 1996 (1996-05-17) * page 1, line 11 - page 2, line 20 * * page 3, line 21 - page 7, line 5; claims 1-15; figures 1-5 * -----	3-6,8-10	
A	MITOLA J: "TECHNICAL CHALLENGES IN THE GLOBALIZATION OF SOFTWARE RADIO" IEEE COMMUNICATIONS MAGAZINE, IEEE SERVICE CENTER, PISCATAWAY, N.J, US, vol. 37, no. 2, February 1999 (1999-02), pages 84-89, XP000804508 ISSN: 0163-6804 * page 84, left-hand column, line 29 - page 86, left-hand column, line 29; figure 2 * * page 87, left-hand column, line 18 - page 89, right-hand column, line 6 * -----	3-6,8-10	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
Place of search		Date of completion of the search	Examiner
The Hague		15 February 2005	Nilsson, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

2
EPO FORM 1503 03 82 (P04C01)



European Patent
Office

Application Number
EP 01 30 7170

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



European Patent
Office

LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 01 30 7170

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1, 2, 7, 11

A Base transceiver system and a program data setting method for processing a CDMA signal at chip-rate using an FPGA and at symbol-rate using an DSP and the setting of operation parameters of the FPGA and DSP respectively as well as the pilot assisted acquisition of the signal in a multipath environment.

2. claims: 3, 4, 5, 6 8-10

A CDMA base transceiver system with modulation-flexible communication modes, i.e. W-CDMA/TDD, W-CDMA/FDD or MC-CDMA in dependency of the service provider.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 30 7170

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-02-2005

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5640416	A	17-06-1997	CA 2219498 A1	19-12-1996
			WO 9641427 A1	19-12-1996
			US 6141372 A	31-10-2000
WO 9614719	A	17-05-1996	GB 2294844 A	08-05-1996
			AU 700136 B2	24-12-1998
			AU 3980095 A	31-05-1996
			CN 1141111 A ,C	22-01-1997
			DE 19581443 B4	16-12-2004
			DE 19581443 T0	27-02-1997
			WO 9614719 A1	17-05-1996
			FI 962789 A	03-09-1996
			JP 9507986 T	12-08-1997
			RU 2153237 C2	20-07-2000
			US 6223030 B1	24-04-2001